

CLAIMS

[1] A radio base station apparatus for communicating with a plurality of mobile station terminals over an air, comprising:

a storage unit which has previously stored therein upper limit values of transmission power for said mobile station terminals, a first threshold referenced to determine whether or not the transmission power is reduced, a second threshold larger than the first threshold, and priority levels of said mobile station terminals; and

a control unit for monitoring total transmission power which is a sum of the transmission power for all said mobile station terminals connected for mutual communication, by a predetermined value, reducing the upper limit value of the transmission power for said mobile station terminal which is assigned the lowest priority level when the total transmission power exceeds the first threshold, and terminating communications with said mobile station terminal which is assigned the lowest priority level when the total transmission power exceeds the second threshold.

[2] The radio base station apparatus according to claim 1, wherein the larger a communication capacity that is required by said mobile station terminal, the higher is said priority level assigned to said mobile station terminal.

[3] The radio base station apparatus according to claim 1, wherein:
when connected with said mobile station terminals through communications using a spread spectrum technology,
the smaller a spreading factor that is used in the communication,

5 the lower is said priority level assigned by said control unit.

[4] The radio base station apparatus according to claim 3, wherein:
the smaller the spreading factor, the larger is said predetermined
value assigned by said control unit.

[5] The radio base station apparatus according to any of claims 1 to
4, wherein:

the larger the communication capacity that is required by said
mobile station terminal, the smaller is said predetermined value assigned by
5 said control unit.

[6] The radio base station apparatus according to any of claims 1 to
3, wherein:

said control unit calculates the difference between the upper limit
value stored in said storage unit and the current transmission power for said
5 mobile station terminal, and sets the difference in values to said predetermined
value.

[7] The radio base station apparatus according to any of claims 1 to
4, wherein:

said control unit reduces the upper limit value by said
predetermined value in stages.

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[8] The radio base station apparatus according to claim 5, wherein:
said control unit reduces the upper limit value by said
predetermined value in stages.

[9] The radio base station apparatus according to claim 6, wherein:
said control unit reduces the upper limit value by said
predetermined value in stages.

[10] A transmission power control method by a radio base station
apparatus, having a control unit and a storage unit, for communicating with a
plurality of mobile station terminals over an air, said method comprising the
steps of:

5 storing upper limit values of transmission power for said mobile
station terminals, a first threshold referenced to determine whether or not the
transmission power is reduced, a second threshold larger than the first
threshold, and priority levels of said mobile station terminals in said storage
unit;

10 monitoring total transmission power which is a sum of the
transmission power for all said mobile station terminals connected for mutual
communication; and

15 by a predetermined value, reducing the upper limit value of the
transmission power for said mobile station terminal which is assigned the
lowest priority level when the total transmission power exceeds the first
threshold, and terminating communications with said mobile station terminal
which is assigned the lowest priority level when the total transmission power
exceeds the second threshold.

[11] The transmission power control method according to claim 10,
wherein the larger a communication capacity required by said mobile station
terminal, the higher is said priority level assigned to said mobile station

terminal.

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[12] The transmission power control method according to claim 10,
wherein:

when connected with said mobile station terminal through
communications using a spread spectrum technology,

5 the smaller a spreading factor that is used in the communication,
the lower is said priority level assigned.

[13] The transmission power control method according to claim 12,
wherein:

the smaller the spreading factor, the larger is said predetermined
value assigned.

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[14] The transmission power control method according to any of
claims 10 to 13, wherein:

the larger the communication capacity that is required by said
mobile station terminal, the smaller is said predetermined value assigned.

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[15] The transmission power control method according to any of
claims 10 to 12, wherein:

said predetermined value is set to the difference between the
upper limit value stored in said storage unit and the current transmission power
5 for said mobile station terminal.

[16] The transmission power control method according to any of
claims 10 to 13, wherein:

when the upper limit value is reduced, it is reduced by said predetermined value in stages.

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[17] The transmission power control method according to claim 14, wherein:

when the upper limit value is reduced, it is reduced by said predetermined value in stages.

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[18] The transmission power control method according to claim 15, wherein:

when the upper limit value is reduced, it is reduced by said predetermined value in stages.

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